CLAIMS

1.   (Currently Amended) A method of conducting a transaction using a payment account for payment over a payment network, the method comprising:

(a) receiving by a service provider other than an issuer of the payment account a first authorization request for the authorization of ~~a~~ the transaction using a first payment account number, wherein:

(i)   the first payment account number has a service provider identification number that is associated with the service provider other than the issuer and is associated with a second payment account number that has an issuer identification number associated with the issuer, said second payment account number not being included in said first authorization request;

(ii)   the first authorization request includes a first acquirer code associated with an acquirer; and

(iii)   the first authorization request is routable through the payment network to the service provider based on said service provider identification number;

(b) responsive to the first authorization request, transmitting by the service provider a second authorization request for authorization of the transaction using the second payment account number, the second authorization request including a second acquirer code associated with the service provider and being routable through the payment network to the issuer based on said issuer identification number;

(c) receiving from the issuer a response to the second authorization request transmitted by the service provider, the response including the second acquirer code and being routable through the payment network based on ~~that~~ the included second acquirer code; and

(d) transmitting from the service-provider to the acquirer a response to the first authorization request received by the service provider based on the response to the second authorization request received by the service-provider from the issuer, the response to the first authorization request including the first acquirer code and being routable through the payment network based on that code.

2.   (original) The method of claim 1, wherein said response to the second authorization request from the issuer further includes said second payment account number, and said response to the first authorization request by the service provider further includes said first payment account number.

3.   (original) The method of claim 1, wherein said first authorization request comprises a message authentication code including transaction data, and said request is formatted with a standard track having a plurality of fields including a discretionary field in which said message authentication code is placed.

4.   (original) The method of claim 3, wherein said service provider verifies the message authentication code.

5.   (Previously Presented) A method of conducting a transaction with a merchant over a communications network using a first payment account number that is associated with a second payment account number, the method comprising:

(a) generating a message authentication code based on one or more transaction details;

(b) transmitting at least the first payment account number and the message authentication code to the merchant;

(c) requesting by the merchant a first authorization request for payment of the transaction using the first payment account number, said second payment account number not being included in said first authorization request, the request being formatted as if payment were tendered at a point-of-sale terminal with a conventional magnetic-stripe payment card, the format having a track with at least a discretionary data field and said message authentication code being transmitted in said discretionary data field;

(d) responsive to the authorization request for the first payment account number, requesting an authorization for payment of the transaction using the second payment account number; and

(e) accepting or declining the authorization request for the first payment account number based on the response to the authorization request for the second payment account number and the message authentication code,
wherein said first and second payment account numbers include respective service provider and issuer identification numbers, wherein a service provider other than the issuer receives said

merchant's request through a payment network based on said service provider identification number, and wherein said service provider generates said request for authorization of payment using the second payment account number and routes said request to said issuer through said network based on said issuer identification number.

6.   (cancelled)

7.   (Currently Amended) The method of claim 5, 6, wherein said service provider includes in said request for authorization for payment an acquirer code associated with said service provider, such that said response from said issuer is routed back to said service provider.

8.   (original) The method of claim 7, wherein said request by said merchant includes an associated merchant acquirer code, and wherein said service provider generates a message based on said accepting or declining step and routes that message to said associated merchant acquirer code.

9.   (Previously Presented) A method of conducting a transaction over a communications network, the method comprising:

issuing by an issuer having an issuer identification number a first payment account number to a user having a computer, said issuer identification number being associated with said first payment account number;

providing a security module for generating a secret key unique to each first account number issued;

generating a second account number associated with said first payment account number;

providing a secure payment application by a service provider to said computer, said application comprising said second account number and said secret key;

storing said secure payment application on said computer;

selecting a merchant with whom to conduct said financial transaction, said merchant having an associated acquirer code;

passing to said computer transaction data;

computer generating a message authentication code based on said transaction data;

transmitting track data in standard track image format to said merchant, said track data comprising said computer generated message authentication code and said second account number, wherein said computer generated message authentication code is directly positioned in the discretionary data field of the standard track image format;

generating a first authorization request based on said data;

transmitting said first request to said service provider;

verifying said first request with said secret key;

obtaining said first payment account number associated with said second account number;

transmitting a second authorization request using said first payment account number to said issuer identification number associated with said first payment account number; and

authorizing or rejecting said second request.

10.   (original) The method of claim 9, wherein said track data comprises a discretionary data field, an account number field, and an expiration date field, and wherein said transmitting track data step further includes

placing said message authentication data in said discretionary data field;

placing said second account number in said account number field; and

placing an expiration date in said expiration date field.

11.   (Previously Presented) The method of claim 10, wherein said transaction data include said associated acquirer code, and a transaction amount.

12.   (original) The method of claim 11, wherein said verifying step further includes verifying said transaction data.

13.   (Previously Presented) The method of claim 9, wherein said second authorization request includes a second acquirer code associated with said service provider, and further comprising the steps of:

generating a message based on said authorizing or rejecting step;

forwarding said message to said service provider based on said acquirer code; and

using said merchant's associated acquirer code to advise said merchant of said message.

14.   (Previously Presented)   A method of conducting a transaction involving a merchant over an electronic payment network, the method comprising:

receiving data related to said transaction from said merchant;

computing a message authentication code based on said data related to said transaction;

placing said message authentication code in a portion of the discretionary data field of a standard payment card magnetic stripe track format to form a track image; and

transmitting said track image, including said message authentication code, over said payment network, without first storing said message authentication code on a magnetic stripe of a payment card.

15.   (Previously Presented) The method of claim 14, wherein said computing a message authentication code is further based on a transaction sequence number.

16.   (Previously Presented) The method of claim 15, wherein placing said message authentication code in a portion of the discretionary data field further includes inserting at least a portion of said transaction sequence number in a portion of the discretionary data field of said track image, and wherein transmitting said track image further includes transmitting said at least a portion of said transaction sequence number over said payment network.

17.   (Withdrawn) An apparatus for conducting a transaction involving a cardholder and merchant having a merchant device over an electronic payment network, the apparatus comprising:

a cardholder memory device;

a cardholder processor capable of executing instructions in a payment application stored in said memory device;

a secret key stored in said cardholder memory device;

said payment application including instructions executable by said cardholder processor to:

receive data related to said transaction from said merchant device;

calculate a message authentication code using at least said data related to said transaction and said secret key; and

transmit at least a portion of said message authentication code to said merchant device for inclusion in a portion of the discretionary data field of track image data formatted as a standard payment card magnetic stripe track data, to be sent over said payment network, without first storing said message authentication code on a magnetic stripe of a payment card.